DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-002436
Date Inspected: 19-May-2008

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 630
OSM Departure Time: 1530
Location: Shanghai, China

CWI Name: Zhang Bao Lei and Yeyong Jun

Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**CWI Present:**	☑ Yes	☐ No	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A
				Approved WPS:	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: OBG and SAS Tower Fabrication

Summary of Items Observed:

On this date, Caltrans Office of Structural Material (OSM) Quality Assurance (QA) Inspector Joselito Lizardo was present as requested to perform observations on the fabrication of Orthotropic Box Girder (OBG) and SAS Tower at Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China.

The QA Inspector has randomly observed the following activities on these Bays mentioned below;

Bay # 2: 77 and 114M Tower Mock-ups, Plate Cutting, Rolling
This QA Inspector observed Tower Mock-up was idle so with the cutting machine. On separate location, this QA observed rolling of 60mm thick plate with marking P291B was completed then on another visit plate with mark P227-1 was on going. On horizontal milling machine, three 75mm thick plates with mark SA333, 23MT SA261 and 23M SA261 were seen complete.

Bay 3-OBG side/bottom panel:
The QA Inspector randomly observed ZPMC welder operator Sun Ti Yu ID Number 054459 utilizing the Flux Cored Arc Welding (FCAW) Process in the 2F (Horizontal Fillet) Position with a gantry mounted welding apparatus and ZPMC Weld Procedure Specification (WPS) WPS-B-T-2123-3, to weld Open-Rib stiffener to Side Plate SP088-001 at weld joint 008/009. The QA Inspector randomly observed ZPMC CWI Zhang Bao Lei monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 300 amps, 30.1 volts, and travel speed randomly observed at 440 millimeters (mm) per minute. The weld parameters appeared to comply with contract requirements.
At separate location, two welders named Du Henghua and Han Xiaofeng were seen tack welding open rib

stiffeners on side panels SP083-001 and SP090-001 utilizing Shielded Metal Arc Welding with THJ506Fe1 and 4. 0mm diameter electrode. Splice plate welding using SAW and WPS-B-T-2221-B-L2C-S-1 was also observed on side panel SP086-001-011. The parameters observed were 509Amps, 30.5Volts with 435mm/min travel speed. Cutting of W shape material to make WT stiffener plates for bottom panel BP086-001 was also noted.

Bay 4 Tower Diaphragm
The QA Inspector randomly observed ZPMC welder Wu Zhibin ID Number 049804, utilizing the Submerged Arc Welding (SAW) Process in the 1G Position (Flat Groove) with ZPMC WPS WPS-B-T-2221-B-U3c-S-1, to weld the fill pass in weld joint NSD1-SA20-110B on Tower Diaphragm Top Plate Sub-Assembly. The QA Inspector randomly observed ZPMC QC Ma Qianli monitoring weld parameters. The QA Inspector also randomly monitored weld parameters and recorded them as follows: 520 amps, 31.5 volts with a travel speed of 434 mm per minute. The weld parameters appeared to comply with contract requirements. Tacking/fit-up was also observed on run off tab then on the weld grove of weld joint WSD1-SA317-3A/4A. The welder was identified as Guo Deng Yun ID# 037997 and was using E9018M H4R 4.0mm diameter. ZPMC QC/CWI was observed monitoring the pre heat and welding parameters.
Caltrans QA J. Lizardo observed plate straightening side panel SP363(A)-001 using procedure HSR1(B)-909 of less than 600 degree C thermal heat input with oxy-acetylene. This straightening is done due to weld distortion and its being monitored by ZPMC QC Inspector Zhang Qiang. On separate location, bending of heavy plates for diaphragm ring marked P654B(N)-4/26(E) and P250B(N)-4/26(B) using procedure HSR1(T)-1163 and HSR1(T)-1163 with heat temperature less than 650 degree C. ZPMC QC was at the vicinity monitoring the work.

Bay 7-OBG - Floor Beam Sub Assembly:
QA Inspector randomly observed ZPMC qualified welders Mr. Hung Shuili ID #044815 and Mr. Liu Longxian ID# 044786 fillet welding web to flange of floor beam FB003-041-003 and FB003-041-002 respectively. Mr. Hung and Mr. Liu were observed welding in the 2F (horizontal) position utilizing a flux corded arc welding (FCAW) process with a 1.4mm diameter electrode, filler metal brand E71T-1, class Supercored 71H, semi automatic. QA Inspector J. Lizardo observed the ZPMC QC CWI Inspector Hu Wei Qing verifying that the welding parameters and pre-heat were in accordance with the Welding Procedure Specification (WPS) WPS-B-T-2132-3. Tack welding/fit-up was also observed on stiffener plates and web to flange of floor beams FB14-008 and FB010-006 by qualified welders Hu Yacheng and Wang Chang. Both welders were using electrode TL508 with 4.0mm diameter. In another location, sub-assembly of floor beam FB14A to 300mm X 300mm diagonal bracing was seen in progress.

Bay #8: Tower Diaphragms
QA Inspector J Lizardo randomly observed ZPMC qualified welder Mr. He Shibing ID 066243 tack welding tower diaphragm joining weld joint WSD1 SA226-108. Mr. He was observed welding in the 1G (flat) position utilizing a shielded metal arc welding (SMAW) process with a 4.0mm diameter electrode, filler metal brand E9018M H4R. Tack welding was also observed on diaphragm ring sub-assembly ESD1-SA309. This was being welded by ID# 058482 and was using FCAW. Both activities were seen monitored by ZPMC QC.
This QA observed bevel cutting and bending of various sizes and shapes of heavy metal for diaphragm ring. One plate being bent was P613A(E)-4/23(D) using natural gas of less than 650 degree C thermal heat input with the aid of hydraulic ram and welded jig. The procedure HSR1(T)-1655 is being implemented.

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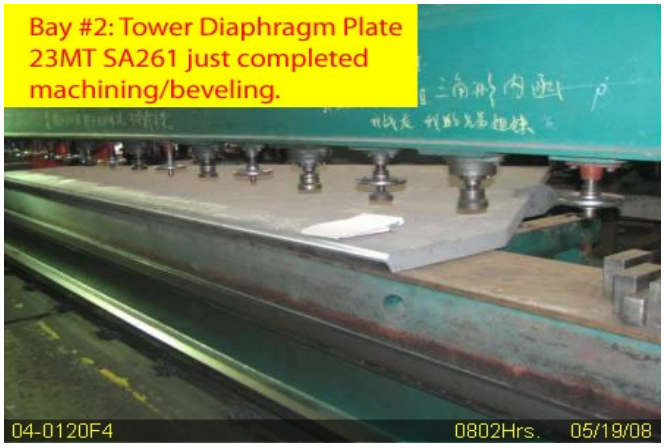

Summary of Conversations:

No significant conversation ocurred today.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Lizardo,Joselito	Quality Assurance Inspector
Reviewed By:	Cochran,Jim	QA Reviewer